

Office Action Summary

Application No.

10/574,332

Applicant(s)

BURRI ET AL.

Examiner

DAVID BANH

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date: 2/06/2008
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. The previous rejection of October 28, 2008 has been vacated and replaced with the present Office Action as follows.
2. Applicant's arguments, filed on January 27, 2009, with respect to the rejection(s) of claim(s) 17-36 under U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further reconsideration, a new rejection has been made with the previously relied upon prior art given a new interpretation of the prior art and additionally, rejections have been made with a newly discovered reference Matsunobu et al. as found below.
3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the idea that the permanent magnet must extend throughout the entire length of the space defined between the bearings) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (c) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claim 17, 20, 22, 23 and 28 are rejected under 35 U.S.C. 102(c) as being anticipated by Matsunobu et al. (US PG Pub 2003/0222526).

Matsunobu et al. teaches, in Fig. 1 and the accompanying description in paragraph 34 of page 2, a rotation body **10** comprising a stator **20** including a stator winding **24**, a rotor **32** including a permanent magnet **36**, being positioned for rotation along a shaft **38**, the rotor supported by a pair of bearings **42, 44** which support the adjoining shaft **38** and the permanent magnet **36** being provided over the entire length of the rotor **32** as shown between the bearings **42, 44**.

For claim 20: It is clearly seen that the stator winding **24** is distributed over the entire length of the stator **20**.

For claim 22: Figure 11 of Matsunobu et al. shows that the rotor **32** is a cylinder shell.

For claim 23: Figure 11 of Matsunobu et al. also shows the rotor element **32** to comprise a blind hole (seen in Figure 11 as the middle expanded portion of the cylinder), which comprises magnets for rotation.

For claim 28: Figure 11 of Matsunobu et al. shows the magnet **36** being positioned on the interior of the rotor by insertion into holes **34**.

6. Claim 17-21, 24, 27 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanabako (US PG Pub 2001/0030471).

Kanabako teaches a rotation body **1** comprising a stator **3a**, including at least one stator winding **6** and a rotor **2a** including at least one permanent magnet **7** and positioned for rotation relative to the stator **3a**. The rotor is supported by a pair of spaced apart bearings **5a, 5b**, also stator winding elements. Paragraph 4 of page 1 teaches the desirability of using non-contact type bearings that do not need lubrication oil and have no friction. Paragraph 35 of page 2 teaches the

stators windings **5a**, **5b** being disposed adjacent to the rotor **2a** and generating a magnetic flux to levitate the rotors. In Figure 2, it is clearly shown that stator winding **5a** supports rotor **2a**, and while it is ambiguous as to whether or not stator winding **5b** directly supports rotor **2a**, it is clear that the stator winding **5b** must at least indirectly support the rotor **2a** via its support of rotor **2b** through body element **8**. Figure 2 of Kanebako shows that the permanent magnet **7** extends along the entire longitudinal axis of the rotor **2a**. The magnet **7** is provided in a region between the bearings **5a**, **5b**.

MPEP §904.01 on Analysis of Claims states that “During patent examination, the claims are given the broadest reasonable interpretation consistent with the specification. *See In re Morris*, 127 F.3d 1048, 44 USPQ2d 1023 (Fed. Cir. 1997).” The broadest reasonable interpretation of claim 17 does not require that the permanent magnet is provided over substantially all the area between the bearings, but rather only substantially between the areas along the longitudinal axis of the rotor, the area being between the bearings. Consistent with this interpretation, the magnet **7** is provided along the entire longitudinal axis of the rotor **2a** and in Figure 1, along the entire circumferential area for each longitudinal segment of the rotor and the area is between the bearings **5a**, **5b**.

Current flowing within the stator winding **6** interacts with the permanent magnet **7** for rotating the rotor (see page 3, paragraph 41).

For claim 18: The stator **3a** as shown in Figure 2 possesses two stator windings **5a**, **6** are shown as being axially offset along a vertical axis of the stator **3a**.

For claim 19: The stator winding **6** interacts with magnet **7** to produce a rotational force acting on the rotor **2a** (see page 2, paragraph 33). The stator winding **6** seen in Figure 2 is a coil of

wire, which is known to generate a magnetic field that is strong within the coil and expands in coverage past the end of the coil of wire. Thus, the magnetic field would interact with the magnet 7 in a region that is at least the width of the coil, which is more than half the axial length of the rotor.

For claim 20: The stator winding **5b** is shown in Figure 2 to cover approximately an entire axial length of the stator.

For claim 21: The stator windings **5a, 6** taught in Figure 2 lie outside of the stator element **3a** and thus rest on an outer surface of the stator.

For claim 24: The first bearing **5a** of Kanebako winds and extends towards the rotor **2a** as seen in Figure 2 and extends between the rotor **2a** and the stator **3a**. The second bearing **5b** of Kanebako utilizes components **2b, 8** as part of the support mechanism and thus extends between the rotor **2a** and the exterior retainer **2b, 8**, the magnet support element **5b** and the stator.

For claim 27: Kanebako shows in Figure 1 that the magnet is annular shaped.

For claim 36: Kanebako teaches a method comprising providing at least one rotation body **1** comprising a stator **3a**, including at least one stator winding **6** and a rotor **2a** including at least one permanent magnet **7** and positioned for rotation relative to the stator **3a**. The rotor is supported by a pair of spaced apart bearings **5a, 5b**, also stator winding elements. Paragraph 4 of page 1 teaches the desirability of using non-contact type bearings that do not need lubrication oil and have no friction. Paragraph 35 of page 2 teaches the stators windings **5a, 5b** being disposed adjacent to the rotor **2a** and generating a magnetic flux to levitate the rotors. In Figure 2, it is clearly shown that stator winding **5a** supports rotor **2a**, and while it is ambiguous as to whether or not stator winding **5b** directly supports rotor **2a**, it is clear that the stator winding **5b** must at

least indirectly support the rotor **2a** via its support of rotor **2b** through body element **8**. Figure 2 of Kanebako shows that the permanent magnet **7** extends along the entire longitudinal axis of the rotor **2a**. The magnet **7** is provided in a region between the bearings **5a, 5b**.

The broadest reasonable interpretation of claim 36 does not require that the permanent magnet is provided over substantially all the area between the bearings, but rather only substantially between the areas along the longitudinal axis of the rotor, the area being between the bearings. Consistent with this interpretation, the magnet **7** is provided along the entire longitudinal axis of the rotor **2a** and in Figure 1, along the entire circumferential area for each longitudinal segment of the rotor and the area is between the bearings **5a, 5b**.

Kanebako teaches that current flowing within the stator winding **6** interacts with the permanent magnet **7** for rotating the rotor (see page 3, paragraph 41).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Hatton (US PG Pub 2002/0109422A1).

Kanebako teaches all of the limitations of claim 22 as found in the parent claim 17. Kanebako does not teach that the rotor is a cylinder shell. However, Hatton teaches that the rotor is a cylindrical shell (page 5, claim 6, lines 4-7). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify Kanebako by making the rotor a

cylindrical shell as taught by Hatton for the purpose of having it be light and uniform while rotating.

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Tumchenok (RU 2159282C2).

Kanebako teaches all of the limitations of claim 23 as found in the parent claim 17. Kanebako does not teach that the rotor is a cylinder body comprising a blind hole. However, Tumchenok teaches that the rotor is a cylinder body with blind holes engaged with body holes (see translated abstract). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify the rotor Kanebako by using a cylinder body with a blind hole as taught by Tumchenok for the purpose of giving the rotor better dynamics for cooling.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Ochi (US Patent 6,786,069B2).

Kanebako teaches all of the limitations of claim 26 as found in the parent claim 17. Kanebako does not teach a frictional lock for supporting the rotor fixed onto the rotating body. However, Ochi teaches a frictional lock for fixing the rotor to a rotating body (column 3, lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kanebako by adding a frictional lock to hold the rotor to the rotating body as taught by Ochi for the purpose of keeping the rotor in a specified position.

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Fujigaki (US PG Pub 2003/0173837A1).

Kanebako teaches all of the limitations of claim 26 as found in the parent claim 17. Kanebako does not teach a cooling system for cooling at least a partial area of the stator.

However, Fujigaki teaches fans being provided to cool the rotor and stator (page 1, paragraph 4). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify Kanebako by adding fans to cool the rotor and stator for the purpose of being able to prolong the stator in the axial direction without overheating it.

12. Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Uno (US PG Pub 2003/0123375)

Kanebako teaches all of the limitations of claim 28 as found in the parent claim 17. Kanebako does not teach that at least one permanent magnet is provided on the rotor casing inner surface. However, Uno teaches a rotor magnet that is affixed to the inner surface of the rotor casing (page 2, paragraph 29). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify Kanebako by placing the magnets on the interior of the rotor to decrease the size of the rotor, increase the security of the magnet and increase the stability of the magnet by reducing the inertial moment of the magnet.

13. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Passini (US Patent 6,397,441).

Kanebako teaches all of the limitations of claim 29 as found in the parent claim 17. Kanebako does not teach that the rotor supports or defines a deflecting cylinder. However, Passini teaches a rotor 1 (Figure 1) that abuts and supports (column 2, lines 37-50) a deflecting cylinder 3 (Figure 1). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify the rotor taught by Kanebako by using it adjacent to the deflecting cylinder for supporting it as taught by Passini for the purpose of being able to use the rotor and rotation body to engage and drive the cylinder and roller elements of a printing.

14. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Loebach (US Patent 4,863,421).

Kanebako teaches all of the limitations of claim 30 as found in the parent claim 17. Kanebako does not teach that the rotor is used in a folding apparatus or in a reel changer. However, Loebach teaches a folding apparatus that utilizes a rotor (column 5, lines 39-50). It would have been obvious to one of ordinary skill in the art the time the invention was made to utilize the rotors taught by Kanebako in the fold machine taught by Loebach for the purpose of driving the cylinders and conveyers to move elements along for folding.

15. Claims 31, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Hara (US Patent 4,930,415).

Kanebako teaches all of the limitations of claims 31 and 35 as found in the parent claim 17. Kanebako does not teach that the rotation body of claim 17 defines a roller of a printing machine. However, Hara teaches a printing machine to contain a motor comprising a rotor and stator to be constructed with a roller body (column 4, lines 55-70). It would have been obvious to one of ordinary skill in the art the time the invention was made to construct the printing machine taught by Hara by using the rotation bodies taught by Kanebako for the purpose of driving the rotating elements of the printing machine.

For claim 32: The combination of Kanebako and Hara teaches all of the limitations of claim 32 as found in the parent claim 31. Kanebako does not teach that the printing machine further comprises a control device configured either the voltage, strength of a current or frequency of a current flowing in at least one stator winding. However, Hara teaches a control device configured for the current, frequency and voltage of a stator winding (column 4, lines 66-

67, column 5, lines 1-20, claim 1). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify the combination of Kanebako and Hara by adding a control device for the purpose of being able to adjust and monitor the strength of the magnetic field being produced by the winding.

16. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) and Hara (US Patent 4,930,415) as applied to claim 31 above in further view of Komatsu (US Patent 6,424,114B1).

The combination of Kanebako and Hara teaches all of the limitations of claim 33 as found in the parent claim 31 above. The combination does not teach an angle sensor for measuring the position of the rotor. However, Komatsu teaches an angle sensor for measuring the position of the rotor (column 3, lines 62-67, column 4, lines 1-6). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify the combination of Kanebako and Hara by adding an angle sensor for measuring the position of the rotor for the purpose of determining its rotation speed.

17. Claim 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Kanebako (US PG Pub 2001/0030471) in view of Puschnert (US Patent 5,950,538).

Kanebako teaches all of the limitations of claim 34 as found in the parent claim 17. Kanebako does not teach a rotation machine to comprise the rotation body taught by claim 17 in addition to rubber blanket cylinders, counter printing cylinders and plate cylinders coupled in pairs with the rubber blanket cylinders wherein each cylinder is driven by one of more cylinders including the rotation body. However, Puscherat teaches transfer cylinders that are blanket cylinders (column 1, line 22) and counter pressure cylinders (column 1, lines 24-25), the

cylinders together forming printing locations (column 3, lines 20-28), plate cylinders (column 3 lines 29-30) which are coupled in pairs with blanket cylinders (column 3, lines 34-36) and are driven by a common drive (column 2, lines 1-16). It would have been obvious to one of ordinary skill in the art the time the invention was made to modify Puschnerat by adding the rotation bodies taught by Kanebako for the purpose of serving as drives to actuate the plate, blanket and pressure cylinders.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **DAVID BANH** whose telephone number is (571)270-3851. The examiner can normally be reached on M-Th 9:30AM-8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DHB
February 11, 2009

/Daniel J. Colilla/
Primary Examiner
Art Unit 2854